

IN THE CLAIMS:

The status of each claim that has been introduced in the above-referenced application is identified in the ensuing listing of the claims. This listing of the claims replaces all previously submitted claims listings.

1. (Currently amended) An assay system, comprising:
a receptor for receiving a sample solution that may include at least one selected analyte;
a reaction zone comprising at least a portion of said receptor or in fluid communication~~associated~~
with said receptor, said reaction zone including at least one reagent configured to produce
a reaction mixture with said sample solution;
at least one detection zone in fluid communication with said reaction zone and configured to
receive at least a portion of said reaction mixture transported from said reaction zone,
said at least one detection zone is carried upon a surface of at least a portion of a
waveguide; and
a detector oriented to receive signals from said at least one detection zone and configured to
sense a physically detectable change in said at least one detection zone, said physically
detectable change correlating with at least one of an absence, a presence, and an amount
of said at least one selected analyte in said sample solution, said detector configured to
generate a signal correlating with at least one of said absence, said presence, and said
amount.
2. (Previously presented) The assay system of claim 1, wherein said at least said
portion of said waveguide comprises a substantially planar structure.
3. (Previously presented) The assay system of claim 1, wherein said waveguide
comprises a planar waveguide.
4. (Canceled)

5. (Previously presented) The assay system of claim 1, wherein said detector is oriented to detect light emitted from said at least one detection zone.
6. (Previously presented) The assay system of claim 5, wherein said detector is oriented to detect light emitted through at least said portion of said waveguide.
7. (Previously presented) The assay system of claim 5, wherein said detector is positioned within a cone of collection angles having an axis oriented substantially orthogonal to the plane of at least said portion of said waveguide.
8. (Original) The assay system of claim 1, comprising a plurality of detection zones.
9. (Previously presented) The assay system of claim 8, wherein said plurality of detection zones is carried upon a surface of at least said portion of said waveguide.
10. (Original) The assay system of claim 9, wherein detection zones of said plurality of detection zones are positioned at discrete locations from one another on said surface.
11. (Original) The assay system of claim 10, wherein said discrete locations are arranged in an array.
12. (Canceled)
13. (Original) The assay system of claim 8, wherein at least two of said plurality of detection zones comprise different capture molecules capable of reacting with different analytes.
14. (Previously presented) The assay system of claim 1, wherein said reaction mixture comprises a reaction product including said at least one selected analyte, said at least one reagent bound thereto, and a physically detectable label on said at least one reagent.

15. (Original) The assay system of claim 14, wherein said physically detectable label emits light when excited.

16. (Original) The assay system of claim 15, further comprising:
a source of electromagnetic energy of at least one wavelength capable of exciting said physically detectable label.

17. (Original) The assay system of claim 16, wherein said electromagnetic energy comprises an evanescent field.

18. (Original) The assay system of claim 1, further comprising:
a display for illustrating data representative of said amount of said at least one selected analyte in said sample solution.

19-35 (Canceled)

36. (Currently amended) An assay system, comprising:
a receptor for receiving a sample solution that may include at least one selected analyte;
a reaction zone comprising at least a portion of said receptor or in fluid communication ~~associated~~
with said receptor, said reaction zone including at least one reagent configured to produce
a reaction mixture with said sample solution, said reaction mixture comprising a reaction
product including said at least one selected analyte, said at least one reagent bound
thereto, and a physically detectable label that emits light when excited by an evanescent
field;
at least one detection zone in fluid communication with said reaction zone and configured to
receive at least a portion of said reaction mixture transported from said reaction zone;
a source configured and oriented to cause the generation of an evanescent field at said at least
one detection zone; and

a detector oriented to receive signals from said at least one detection zone and configured to sense a physically detectable change in said at least one detection zone, said physically detectable change correlating with at least one of an absence, a presence, and an amount of said at least one selected analyte in said sample solution, said detector configured to generate a signal correlating with at least one of said absence, said presence, and said amount.

37. (Previously presented) The assay system of claim 36, wherein said at least one detection zone is carried by a substantially planar structure.

38. (Previously presented) The assay system of claim 37, wherein said at least one detection zone is carried upon a surface of said substantially planar structure.

39. (Previously presented) The assay system of claim 38, wherein said substantially planar structure comprises at least a portion of a planar waveguide.

40. (Previously presented) The assay system of claim 37, wherein said detector is oriented to detect light emitted from said at least one detection zone.

41. (Previously presented) The assay system of claim 40, wherein said detector is oriented to detect light emitted through said substantially planar structure.

42. (Previously presented) The assay system of claim 40, wherein said detector is positioned within a cone of collection angles having an axis oriented substantially orthogonal to the plane of said substantially planar structure.

43. (Previously presented) The assay system of claim 36, comprising a plurality of detection zones.

44. (Previously presented) The assay system of claim 43, wherein said plurality of detection zones is carried upon a surface of a substantially planar structure.

45. (Previously presented) The assay system of claim 44, wherein detection zones of said plurality of detection zones are positioned at discrete locations from one another on said surface.

46. (Previously presented) The assay system of claim 45, wherein said discrete locations are arranged in an array.

47. (Previously presented) The assay system of claim 46, wherein said substantially planar structure comprises a planar waveguide.

48. (Previously presented) The assay system of claim 43, wherein at least two of said plurality of detection zones comprise different capture molecules capable of reacting with different analytes.

49. (Previously presented) The assay system of claim 36, further comprising:
a display for illustrating data representative of said amount of said at least one selected analyte in said sample solution.